ABSTRACT OF THE DISCLOSURE

A method for fabricating a one time programmable read only memory (OPTROM) device. A first conductive layer, a first semiconductor layer, an anti-fuse layer, a second semiconductor layer are sequentially formed on a substrate. The second semiconductor layer, the anti-fuse layer, the first semiconductor layer, and the first conductive layer are then patterned along the first direction into a first conductive line. The second semiconductor layer, the anti-fuse layer, and the first semiconductor layer are patterned into a memory cell. A dielectric layer is deposited over the substrate, wherein oxygen plasma sputtering is performed to clean the substrate before deposition. A second conductive line is formed over the second dielectric layer, running generally orthogonal to the first conductive line.